SECTION VII. THE NORTHERN AND NORTHWESTERN EDGE OF THE BOHEMIAN MASS

Introduction

This work treats the Lausitz, the Elbe valley region, the North Bohemian Tertiary area, the Erzgebirge, the Vogtland, and the Fichtel Mountains. This whole region forms the northern and northwestern edge of the Bohemian Mass, and thus follows the discussion of the Silesian ore region.

The discussion is preceded by a review of the over-all structure of the Bohemian Mass, which is followed by a geological-tectonic review of the area.

The deposits in the area under discussion are described in detail. The area is subdivided into:

A. Pre-Varistian deposits

B. Deposits of the Varistian orogenesis

C. Saxonian deposits

The pre-Varistian deposits are of no great importance. Most of them are syngenetic pyrite deposits situated in pre-Upper Devonian rocks. Most of them have been subjected to Varistian effects. The intensity of the Varistian influence increases from northwest to southeast, with local metasomatoses being caused by intruded granites.

The edge zone is dominated by deposits of the Varistian orogenesis. The great diversity allows a new insight into the mutual effect of magma, tectonics, and deposits.

The following types of deposits are discussed:

1. Pre- and syntectonic ore deposits of predominantly contact-metamorphic genesis

2. Contact-metasomatic and contact-metamorphous ore deposits, bound to post-tectonic granites

3. Pneumatolytic and pneumatolytic-catathermal deposits with tin and tungsten ores

4. Hydrothermal vein fillings

The temporal, spatial, and causal relations between the deposits, magma, and tectonics are discussed in conjunction with each individual area. The discussion of the dependencies, found to occur within small areas, is supplemented by the corresponding discussions, covering broad areas of the units of higher order.

The Saxonian deposits are of no economic importance. However, they supply excellent evidence on the geological position of the more recent mineralization. Only one real, so to speak, autochthonous Saxonian deposit can be detected, while most of the fissure fillings are mobilized. Their position depends, on the one hand, on Varistian deposits in the sub-base, and, on the other hand, on Tertiary thermal springs.

The last section summarizes the results and emphasizes the relations between the geological and structural factors and the ore deposits of the northern and northwestern edge zone of the Bohemian Mass. It shows dependencies and mutual effects between small units, e.g., the individual late-Varistian granite intrusions bearing the Varistian mineralization, as well as relationships covering a large area, which can be observed throughout the entire northwestern, northern, and northeastern peripheral zone. A deep zone of weakness is marked by the late Varistian granites and by the Tertiary magmatism. This zone of weakness was used by the most recent late Varistian granites, which contain many volatile components, for their uprise, so that the deposits connected with them are bound to this zone.

Simultaneously, findings on the distribution of the Varistian deposits within the entire Bohemian Mass were developed.

The real primary deposit formation in connection with the Varistian orogenesis ends with the Rotliegendes.

It can be proved that most of the fissure fillings are mobilized in the Cretacean and in the Tertiary. Only the lead-zinc ore deposit of the Bohemian Mountains near Rongstock on the Elbe is bound to the Tertiary magmatism and connected with a center of eruption.

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(NOTE: The following map, although not listed in the Table of Contents, apparently belongs to this volume: The ore deposits of the Erzgebirge.)